

| Taxon | Distribution of palatal dentition | | | | | Palatal tooth arrangements | | | | References |
|-------------------------|-----------------------------------|----------|-----------|--------------|---------------|----------------------------|----------------------------|------------------------|---------------------------------------|------------------------------------------------|
| | vomer | palatine | pterygoid | parasphenoid | ectopterygoid | shagreen | parallel to the jaw margin | longitudinal tooth row | posterior transverse flange tooth row | |
| <i>Oedaleops</i> | ? | ? | ? | ? | ? | ? | ? | ? | ? | Reisz et al. 2009 |
| Eothyrididae | | | | | | | | | | |
| <i>Eothyris</i> | ? | ? | x | - | ? | - | - | x | x | Reisz et al. 2009 |
| Caseidae | | | | | | | | | | |
| <i>Cotylorhynchus</i> | x | x | x | x | - | - | - | x | x | Reisz & Sues, 2000 |
| <i>Ennatosaurus</i> | ? | x | x | x | ? | - | - | x | x | Maddin et al. 2008 |
| <i>Casea</i> | ? | ? | x | x | ? | x | - | x | x | Carroll, 1988 |
| <i>Aerosaurus</i> | ? | ? | x | x | ? | x | - | x | x | Langston & Reisz, 1981 |
| <i>Varanops</i> | ? | ? | x | ? | ? | ? | - | ? | x | Campione & Reisz, 2010 |
| <i>Mycterosaurus</i> | ? | x | x | ? | ? | ? | ? | ? | ? | Williston, 1915 |
| <i>Elliotsmithia</i> | ? | ? | x | ? | ? | ? | ? | ? | x | Reisz et al. 1998; Broom 1937 |
| <i>Mesenosaurus</i> | x | x | x | x | - | - | - | x | - | Reisz & Berman, 2001 |
| Ophiacodontidae | | | | | | | | | | |
| <i>Ophiacodon</i> | - | - | x | - | - | - | - | x | x | Huene, 1956 |
| <i>Varanosaurus</i> | x | - | x | - | - | - | - | x | x | Berman et al., 1995 |
| <i>Archaeothyris</i> | ? | x(?) | x(?) | ? | x(?) | ? | ? | ? | ? | Reisz, 1972 |
| Edaphosauridae | | | | | | | | | | |
| <i>Edaphosaurus</i> | x | x | x | - | x | x | - | x | - | Modesto, 1995 |
| <i>Haptodus</i> | x | x | x | - | - | x | - | x | x | Laurin, 1993 |
| Sphenacodontidae | | | | | | | | | | |
| <i>Sphenacodon</i> | ? | x | x | ? | ? | - | - | x | x | Eberth, 1985 |
| <i>Secodontosaurus</i> | - | - | x | - | - | x | - | x | x | Reisz et al., 1992 |
| <i>Dimetrodon</i> | - | x | x | - | x | - | - | x | x | Case, 1904; Romer, 1956 |
| <i>Tetraceratops</i> | - | x | x | - | - | - | - | x | x | Laurin & Reisz, 1996 |
| Biarmosuchia | | | | | | | | | | |
| <i>Biarmosuchus</i> | - | x | x | - | - | - | - | x* | x | Ivakhnenko, 1999 |
| <i>Lycaenodon</i> | - | x | x | ? | - | - | - | x* | ? | Sigogneau-Russell, 1989; Sidor, 2003 |
| <i>Herpetoskylax</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989; Sidor & Rubidge, 2006 |
| Dinocephalia | | | | | | | | | | |
| <i>Styracocephalus</i> | - | x | x | - | - | - | - | x* | x | Rubidge & van den Heever, 1997 |
| <i>Titanophoneus</i> | - | x | x | - | - | - | - | x* | x | King, 1988 |
| <i>Australosyodon</i> | - | x | x | - | - | - | - | x* | - | Rubidge, 1994 |
| <i>Syodon</i> | - | x | x | - | - | - | - | x* | - | King, 1988 |
| <i>Estemmenosuchus</i> | x | x | x | - | - | - | - | x | x | Olson, 1962; King, 1988 |
| <i>Jonkeria</i> | ? | ? | ? | ? | ? | ? | ? | ? | ? | Kemp, 1982 |
| <i>Tapinocaninus</i> | - | x | - | - | - | - | - | x* | - | Rubidge, 1991 |
| <i>Struthiocephalus</i> | - | - | - | - | - | - | - | - | - | Boonstra, 1965; King, 1988 |
| <i>Ulemosaurus</i> | - | - | - | - | - | - | - | - | - | King, 1988 |
| <i>Moschops</i> | - | - | - | - | - | - | - | - | - | Boonstra, 1936 |
| Anomodontia | | | | | | | | | | |
| <i>Biseridens</i> | x | x | x | - | - | - | - | - | ? | Liu et al. 2009 |
| <i>Otscheria</i> | - | - | - | - | - | - | - | - | - | Kemp, 1982 |
| <i>Eodicynodon</i> | - | - | - | - | - | - | - | - | - | Kemp, 1982 |
| Gorgonopsidae | | | | | | | | | | |
| <i>Aelurosaurus</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Arctognathus</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Cyonosaurus</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Leontocephalus</i> | - | x | x | - | - | - | - | x* | - | Sigogneau-Russell, 1989 |
| <i>Scylacops</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Aloplosaurus</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Gorgonops</i> | - | x | x | - | - | - | - | x* | - | Sigogneau-Russell, 1989 |
| <i>Arctops</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Lycaenops</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Prorubidgea</i> | - | x | x | - | - | - | - | x* | x/- | Sigogneau-Russell, 1989 |
| <i>Dinogorgon</i> | - | x | x | - | - | - | - | x* | - | Sigogneau-Russell, 1989 |
| <i>Rubidgea</i> | - | x | ? | - | - | - | - | x* | - | Sigogneau-Russell, 1989 |
| Therocephalia | | | | | | | | | | |
| <i>Moschorhinus</i> | - | - | - | - | - | - | - | - | - | Mendrez, 1974a |
| <i>Euchambersia</i> | - | - | - | - | - | - | - | - | - | Sigogneau-Russell, 1989 |
| <i>Theriognathus</i> | - | - | x | - | - | - | - | x* | - | Brink, 1956 |

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| <i>Moschowhaitsia</i> | - | - | - | - | - | - | - | - | - |
| <i>Ictidosuchoides</i> | - | - | - | - | - | - | - | - | - |
| <i>Viatkosuchus</i> | - | - | x | - | - | - | - | x* | x |
| <i>Regisaurus</i> | ? | - | x | - | - | - | - | x* | - |
| <i>Ericiolacerta</i> | - | - | - | - | - | - | - | - | Kemp, 1982 |
| <i>Bauria</i> | - | - | - | - | - | - | - | - | Kemp, 1982 |
| <i>Glanosuchus</i> | - | ? | x | - | - | - | - | ? | x |
| <i>Promoschorhynchus</i> | - | - | - | - | - | - | - | - | Mendrez, 1974b |
| <i>Cynodontia</i> | | | | | | | | | |
| <i>Dvinia</i> | - | - | - | - | - | - | - | - | Tatarinov, 1968 |

Note

* : restricted to small area

x/- : varies between species